Application/Control Number: 09/965,374
Art Unit: 2127

Docket No.: PALM-3612

REMARKS

Reconsideration and allowance are requested. Claims 1 - 29 are pending. Claims 1, 3, 5 - 7, 10-12, 16, 17, 20-21, 23, 24 and 26 are amended. No amendments should narrow the scope of the claims and no limitations are added to overcome prior art. The amendments clarify the claims in terms of Sections 101 and 112 and should place the claims in condition for allowance. Applicant respectfully submits that although this amendment is after Final, it appropriately places this application in condition for allowance and request entry of the amendment and allowance of this case.

Rejection of Claims 1 - 14 Under Section 101

Applicant has amended independent claims 1 and 10 to recite a computer-implemented method. Therefore, Applicant submits that claims 1 - 14 conform to Section 101 and recite statutory subject matter. Other dependent claim amendments have been made to make the claim language consistent. Withdrawal of this rejection is respectfully requested.

Rejection of Claims 1 - 29 Under Section 112

Applicant respectfully submits that in above amendments addresses each of the Examiner's Section 112 rejections. In most cases, it is clear where the amendments obviate any specific rejection. None of the amendments are for the purpose of adding limitations to the claims or narrowing the claims.

The issues of antecedent basis in claims 1, 10, 16; 3 and 12; and 5 - 7, 11, 17 and 20-22 have each been addressed above. Further, Applicant has amended claims 23 and 26 to clarify the relationship between the computer system and the method for scheduling tasks.

Applicant respectfully submits that these claims now conform to Section 112.

Rejection of Claims 1, 3 - 8, 10, 12 - 14, 16, 18 - 22 and 26 - 29 Under Section 103

The Examiner rejects claims 1, 3, 4 - 8, 10, 12 - 14, 18 - 22 and 26 - 29 under Section 103 in view of U.S. Pat. No. 6,330,583 to Reiffin ("Reiffin") and newly-cited U.S. Pat. No. 6,575,897 to Shi et al. ("Shi et al.").

Request to withdraw Finality of Office Action

Applicant notes that the Examiner has introduced for the first time the Shi et al. reference in this Final Office Action. As stated in MPEP 706.07(a):

> Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement....

The citation of Shi et al. was not necessary based on Applicant's amendment or based on information from an IDS submitted by Applicant. Accordingly, this Office Action should not be made final because the citation with Shi et al. "introduces a new ground of rejection." Furthermore, page 5 paragraph 7 makes reference to not only Reiffin and Shi but also Waldron. Applicant is unsure of the Examiner's analysis and what prior art is being applied. Accordingly, Applicant requests withdrawal of the finality of the Office Action.

We now turn to the claims. As mentioned in the previous Response, to establish a *prima facie* case of obviousness, the Examiner must meet the three criteria of articulating a motivation or suggestion to combine the references, there must be some reasonable expectation of success and the prior art references must teach or suggest all the claim limitations. Applicant submits that the combination of Reiffin and Shi et al. does not meet the criteria for the reasons set forth below.

Several other principles concerning an obviousness rejection are applicable here. These requirements were mentioned briefly in the previous office action. If the examiner

determines there is factual support for rejecting the claimed invention under 35 U.S.C. 103, the examiner must then consider any evidence supporting the patentability of the claimed invention, such as any evidence in the specification or any other evidence submitted by the applicant. The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and any secondary evidence. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of "a preponderance of evidence" requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not. MPEP 2142.

Furthermore, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. *In re Young*, 927 F.2d 588, 18 USPQ2d 1089 (Fed. Cir. 1991). MPEP 2143.01. Thus, the MPEP requires that each prior art reference must be considered in its entirety, as a whole, including portions that would lead away from the claimed invention. MPEP 2141.02.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). MPEP 2143.01.

Applying these principles, Applicant traverses the conclusion that one of skill in the art would be motivated to combine Reiffin with Shi et al. The Examiner is correct in concluding the Reiffin fails to teach ranking the registered service and scheduling the

registered services in the dedicated pre-assigned time slice. The Examiner however concludes that it would be obvious to combine Reiffin with Shi et al. because Shi et al.'s ranking process would improve the efficiency in Reiffin's system by providing a "balanced system that can greatly avoid task starvation...." What we shall see is that these two references are technically different and focus on completely different problems (one deals with wasted CPU cycles and the other deals with heavy CPU usage) and thus mutually exclusive. One of skill in the art would recognize these differences and not find motivation to combine these patents. In fact, there are substantial reasons supporting a conclusion that these references teach away from one another.

Reiffin teaches a networked solution for processing large compute-intensive tasks on a distributed parallel basis. The primary idea is to utilize unused workstation time. Reiffin notes that a distributed system utilizes the otherwise "wasted execution time and computation power of the workstations or personal computers by enabling th3eir CPUs to perform in the background parallelized compute-intensive tasks." Col. 1, lines 61 - 65. The network comprises a plurality of workstations or personal computers each having a pre-emptive multitasking feature where a remote network subtask can be processed on the workstation in the background utilizing the otherwise wasted CPU cycles. The processing is done in the background and does not affect the primary processing because the background processing is done using otherwise "wasted execution time." Reiffin's idea involves breaking a task down into parallel subtasks executed simultaneously on different workstations. A "task" in Reiffin is a compute job such as a science analysis that is too large for a single processor. See Abstract.

Shi et al., on the other hand, focuses on an invention for performing various tasks in a multi-tasking or time sliced environment under "heavy network traffic conditions." Col. 3, lines 25-26, 39-40. The problem identified by Shi et al. is that under such heavy traffic conditions, this "task starvation" occurs which means that a processor is unable to execute

lower priority tasks each for a sufficient amount of time to allow each low priority task to effectively perform. Shi et al. is a patent owned by Cisco Technology, Inc., and the computer device on which their invention is applied is typically a "router, switch, hub or the like." Col. 3, line 16. These routers and switches transmit packets along various ports and routes the packets to various destinations. Shi et al. explain that the routers and switches have other tasks they perform besides routing packets of data but that under heavy traffic conditions, the lower priority tasks (packet routing being a high priority task) sometimes do not get accomplished. Therefore, this "task starvation" condition occurs. The Shi et al. invention addresses this scenario.

Applicant submits that there are several reasons why there is inadequate (by a preponderance of the evidence) motivation or suggestion to combine Reiffin with Shi et al. First, the Examiner states that the motivation is that Shi et al.'s (The Examiner stated that it was Waldron in paragraph 7 but Applicant considers this to be an error and assumes that this should be Shi et al.) ranking system would improve the efficiency on Reiffin's system by providing a balanced system that can greatly avoid task starvation. The motivation to address this type of issue found in Shi et al. is not found in Reiffin because, as mentioned above, Reiffin's problem is how to utilize wasted execution time. As set forth by Reiffin, the problem is the exact opposite of a "heavy traffic condition" where tasks cannot be accomplished. Reiffin's invention teaches how to take unused processor time and utilize it efficiently.

Another reason that urges against the combination of these references is that Reiffin's invention applies to a general purpose personal computer or other standard desktop type computers. Shi et al., on the other hand, clearly focuses on computing devices that have highly specialized application, such as routers, switches and hubs. Therefore, the difference in computing devices and application between these two references is another reason that would lead one of skill in the art away from trying to blend their teachings.

Therefore, Applicant submits that the requisite motivation to combine these references is lacking because one of skill in the art would easily recognize that Reiffin will not approach a "task starvation" problem due to the excess, unused computing time. In a typical computer as taught by Reiffin, primary and secondary priority tasks would simply all be processed because of the excess, unused processor capability. Instead of motivation to combine, Applicant submits that these references teach away from any combination. Certainly Reiffin teaches away from any problem associated with a lack of ability of the computer system to be able to process lower priority tasks or to even approach a condition such as "task starvation".

Therefore, since by a preponderance of the evidence there is insufficient motivation or suggestion to combine Reiffin with Shi et al, Applicant submits that all the claims rejected by the combination of Reiffin and Shi et al. are in condition for allowance.

Rejection of Claims 2, 9, 11, 15, 17 and 25 Under Section 103

The Examiner rejects claims 2, 9, 11, 15, 17 and 25 under Section 103 as being unpatentable in view of Reiffin, Shi et al. and further in view of U.S. Pat. No. 6,098,090 to Burns ("Burns"). Applicant traverses this rejection and submits that because, by a preponderance of the evidence, there is insufficient suggestion or motivation to combine Reiffin with Shi et al. Applicant submits that this case against the combination of these references is clearly set forth above. Accordingly, claims 2, 9, 11, 15, 17 and 25 are patentable and in condition for allowance.

Rejection of Claims 23 and 24 Under Section 103

The Examiner rejects claims 23 and 24 as being taught under Section 103 by a combination of Reiffin and Burns. Applicant traverses this rejection.

Applicant agrees with the Examiner that Reiffin does not teach that the set of registered services may be dynamically updated. However, the Examiner asserts that Burns teaches dynamically updating the set of registered services at col. 2, lines 5 - 19. Applicant respectfully submits that Burns does not teach this feature and therefore claims 23 and 24 are patentable. First, claim 23 recites the step of cycling through a set of pre-assigned time slices to schedule a set of tasks comprising a background task and a foreground task, each of the tasks assigned to one of the time slices wherein scheduling of the background task is independent from the scheduling of the foreground task. These set of tasks comprise the background task and the foreground task that are assigned to time slices. Before discussing the rest of claim 23, we'll cite lines 5 - 19 of column 2 of Burns:

> A first thread having a background task to be executed passes a background task reference to a background processor having a thread which executes background tasks. The background processor includes a pending task structure and an active task structure. The first thread invokes a function, or method, of the background processor to insert the background task reference into the pending task structure. Periodically, the background processor examines the pending task structure to determine if background tasks have been registered for execution. Upon determining that one or more references exist in the pending task structure, the background processor moves the references from the pending task structure to the active task structure. The background processor reads the active task structure and executes the background tasks in the same thread via the references. Burns, Col. 2, lines 5 - 19.

Clearly Burns here discusses the pending task structure and the active task structure for management by the background processor. Now, the rest of claim 23 does not discuss tasks but discusses the set of registered services. Applicant respectfully submits that inasmuch as Burns is discussing a first thread and a background processor for processing "background tasks," that this differs from the scheduling of a service manager of a "set of services recited in claim 23. Notably, claim 23 goes on to claim the step of scheduling execution of a service manager operating on the background thread wherein this step further comprises 1) the service manager scheduling a set of services that are registered therewith for execution within its time slice, wherein the set of registered services may be dynamically